

SENN (N.)

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SURGICAL CLINIC.

BY

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Held at Rush Medical College, March 28, 1893, at the meeting of the Alumni of the College.

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GENTLEMEN: There are a few things in this clinic that we place spécial stress upon: (1) diagnosis; (2) familiarity with the gross and minute anatomy of the pathological conditions requiring operative interference; and (3) giving the students an opportunity to witness the subsequent clinical history in every case subjected to operation.

I have brought forward this morning a number of cases that have been recently operated upon in order to acquaint the old alumni of this college with the work we are doing. At every clinic we have, in the arena, three consultants selected from the graduating class, who are expected to assist me in my difficult task of making a correct diagnosis in obscure cases. In this way the students have acquired a meri-

torious degree of diagnostic skill. If I tell you that they have diagnosticated in this clinic cases of krypto-genetic septico-pyæmia, a branchial cyst, leukæmia of different organs, made a positive differential diagnosis between carcinoma and sarcoma, subsequently proven by microscopical examination, you will have some idea of the work that we are doing in this direction.

CASE I. *For Diagnosis:*—The case I now show you was brought here last week with a number of diagnoses, notably carcinoma of the liver, tumor of the pancreas, enlargement of the spleen, etc.

We find upon examination a man about 30 years of age, who, from his general appearance, is evidently suffering from some serious difficulty. As we have a history of a tumor or a swelling growing slowly in the upper and left region of the abdomen, we shall first make an attempt to locate the tumor anatomically, bringing it in connection with some of the abdominal organs. I can outline a tumor with rounded, lobulated margins, that I can push forward and upward, the dullness extending over in the direction normally occupied by the spleen. Having located the tumor we shall attempt to recognize its nature by a very careful examination, aided by an examination of the blood. We locate the tumor anatomically with precision by resorting to insufflation of air per rectum, which pushes the tumor upward and outward, showing conclusively that it is an intra-abdominal tumor. The general appearance of the patient already indicates that this splenic swelling has seriously interfered with the process of hæmatogenesis. It points to a serious affection of at least one of the principal blood-producing organs. I wish to show you under the microscope the blood of this patient which has been subjected to a staining process recently devised for recognizing certain pathological conditions of the blood, namely, with eosin. Under the microscope you can see the eosinophilous leucocytes, or cells. And you will find the white corpuscles, or leucocytes, in the proportion of about 25 per cent., or one leucocyte to every three or four red corpuscles; hence a serious change in the histological composition of the blood has already taken place.

You will recognize in the specimen leucocytes which contain two or more nuclei. It is this multiple nucleus that is so characteristic in these cases. You will have learned from your histological studies that in the normal reproduction of cells you always witness some symmetry in the splitting up of the protoplasm in the formation of new cells, technically called karyokinesis. In these leucocytes no such characteristic process can be seen, but instead, there is an irregular splitting of the protoplasm; in other words, instead of karyokinesis you see here a beautiful picture of the process of fragmentation of the nucleus. It has been shown by Klebs and others long ago, that fragmentation is an entirely different process from karyokinesis, one meaning the reproduction of cells, the other a destruction of them. The nucleus is broken up in such a manner that it is unable to reproduce its own kind, and later undergoes molecular degeneration and is destroyed; hence the transformation of white into red blood-corpuscles does not take place. This is the reason why the patient becomes more anæmic, and is the direct cause of that progressive anæmia so invariably found in connection with splenic leukæmia. As I have a great many cases to show you this morning, and as our time is limited, I regret that I cannot make more extended remarks on this exceedingly interesting case. And yet, let me once more insist that in the diagnosis of tumors or swellings in the splenic region, you are to make a correct diagnosis in reference to the anatomical location and relation of the swelling by such means as I have pointed out to you, and later, make a positive differential diagnosis between the different forms of enlargement of the spleen, such as simple hypertrophy, malarial spleen and the more serious affection, splenic leukæmia, by subjecting the blood to a microscopical examination. By so doing you will save your patients very much useless medication, and you will at once eliminate any idea in reference to operative treatment. It is our duty in this clinic not only to point out the indications for, but also the indications against operative treatment. This is one of those unfortunate cases where the surgeon is still powerless to favorably influence the splenic lesion by extirpation or by any other form of surgical treatment. We have to follow in

this case Mosler's example and place the patient on symptomatic treatment. It is our intention to start as speedily as possible with some preparation of arsenic, administered internally and by subcutaneous injections, combining this treatment with large doses of carbonate of iron. We have the authority of Mosler that at least in a few cases this treatment has proved successful. You will permit me to express my conviction that I look upon this disease as being of microbic origin, and that in the near future a microbe will be found having an ætiological connection with all forms of leukæmia. I trust it will be left to one of the members of the present class to detect this microbe and thus add something more to the fame of this college.

Cases of Joint Tuberculosis.

I now show you the remote results in a few cases of resection of the knee-joint for very extensive joint and bone tuberculosis.

CASE II:—Union of the operation wound by primary intention; firm consolidation at the end of three months. We have so far fixed the limb in this case in a permanent plaster-of-Paris cast, knowing well that the too early removal of mechanical support is prone to be followed later by angular contraction. No such fear need be entertained in connection with this case. There is only about one-half or three-quarters of an inch of shortening, as we are always exceedingly careful not to interfere unnecessarily with either of the epiphysial lines. The shortening of the limb will remain slight as neither of the bone-producing centers were destroyed.

CASE III.—The second case of resection of the knee-joint I show you was done because of very extensive fungous disease of the capsule with secondary involvement of the articular extremities; the disease having extended from the synovial membrane to cartilage and from cartilage to the underlying bone. You will see again that the operation wound, in spite of the extensive character of the disease, has healed by primary intention throughout. The limb is

now in the second cast. The operation was performed five weeks ago. I look upon the horse-shoe shaped incision with the convexity downward as an exceedingly unsatisfactory one, because, in the first place, it does not expose the field of operation thoroughly, and, in the second place, the line of suturing falls in a place where the scar tissue is later exposed to irritation, and consequently prone to ulceration. We make the incision curved, but with the convexity directed upward, falling thus above the patella, which, if not affected by the disease, is always preserved. I know of no incision which exposes the diseased tissue so thoroughly and renders such ready access to direct operative treatment as the incision I am now showing you. Transverse section of the patella is made after reflection of the flap, followed by two vertical sections on each side of the patellar fragments, thus opening widely the knee-joint. The patellar fragments are brought into contact and held there with chromicized catgut sutures, not silver wire, because the former will keep the fragments in apposition long enough to insure bony union, which has already been accomplished in this case.

CASE IV. *Resection of the Elbow-Joint for Tuberculosis:—*

The next case I present to you is one in which we performed resection of the elbow-joint at the last clinic. The disease was unusually extensive, and on two different occasions operations had been made in close proximity to the elbow-joint, one on the radial side, and during the course of the winter the other in the bend of the elbow. We found in this case products of the tubercular disease outside of the capsule of the joint, a para-articular tubercular abscess. The disease in the joint itself finally reached a stage where resection appeared to be a positive necessity. In spite of the fact that we had an extensive undermining of soft tissues, the result of secondary infection with pus microbes, the course after the operation, as you see, is exceedingly favorable. Nearly a week has transpired, and yet the wound shows every evidence of being aseptic. That we scraped the tubercular abscesses around the joint thoroughly is to be taken as a matter of course. We made in this case

the most conservative operation, and let me insist that in the operative treatment of joint disease to-day no surgeon is warranted in removing any more of the healthy tissue than is compatible with the pathological conditions found in and about the joint; in other words, we are becoming more and more conservative in the operative treatment of joint tuberculosis. We make now a typical resection as an exception to the general rule and limit the operative procedure to the removal of the diseased capsule and, if necessary, add on an atypical resection. In this case, for instance, although we found a large tubercular sequestrum in the joint, with very extensive tubercular lesions of the joint surfaces, the olecranon process was preserved, the articular surface vivified, and after resection of the joint, it was brought again in contact with the shaft and fastened with an ivory nail, thus riveting the temporarily resected olecranon process to the shaft of the ulna. I am sure that this ivory nail will hold the fragment in its position until bony union has taken place. So in the surgery of other joints, we now seek to secure free access to the joint by temporary resection of some of the bony prominences, which are again fastened *in situ*, either by using chromicized catgut sutures, or bone or ivory nails.

CASE V. *Penetrating Wound of the Knee-Joint:—*

For the benefit of the visiting alumni, I am exceedingly anxious to show a case that has given us great anxiety during the last six weeks. It is one of those usual cases of insignificant penetrating wound of the knee-joint, the patient walking about for three or four days after he received the injury, when he was attacked with a severe suppurative synovitis which resulted at a very early stage in extensive phlegmonous inflammation of the connective tissue of the thigh, undermining the tissues from six inches below the knee up to the hip-joint, which nearly destroyed the patient's life. He came into the clinic with small drains which had been passed through the knee-joint—in other words, inefficient joint drainage. He was suffering from such severe

septic manifestations that it became evident we had either to resort to early amputation near the hip-joint, or, establish more effective drainage. The size of the scars I show you now approximately demonstrates the size of the drains that were used in this case. I show you this case, gentlemen, for the purpose of insisting over and over again that when you drain for suppurative lesions the larger the drain the greater the safety of limb and patient. The time has long since past when we rely on a No. 8 catheter in draining the pleural cavity or [a suppurating knee-joint. Supply yourselves with drains the size of my thumb, and if you make a mistake make it on the safe side and use a larger drain. You noticed that in this case the drain was passed underneath the patella through the upper recess of the joint. The knee-joint was drained also in a posterior direction, while at the same time a transverse drain was placed underneath the patella; the only way in which to drain a suppurative knee-joint properly. There is another important lesson to be learned in connection with this case. In spite of extensive drainage and antiseptic irrigations, we soon found that there was a tendency to dislocation of the tibia backward, which I have demonstrated here on more than one occasion; one of those common forms of subluxation and angular deformity following suppurative inflammations of joints that should require early and efficient prophylactic treatment. If we had not immobilized the limb properly, the patient now would have recovered with an angular deformity and a perfectly useless limb. In order to prevent such an undesirable complication, we furnished the limb with adequate mechanical support, and prevented subluxation by supplying the posterior aspect of the head of the tibia with a cushion so as to press the head of the tibia forward while the weight of the thigh, with a proper bandage, had a tendency to force the condyles of the femur in an opposite direction. Thus we have succeeded in keeping the limb in a useful position for ankylosis to take place.

As most every practitioner has so many cases of joint tuberculosis to treat, and so few are willing, as a rule, to adopt and carry out heroic operative treatment, I am anxious

to show you now a few cases of joint tuberculosis for the purpose of demonstrating the modern method of treatment that has yielded such marvelous results in this and other clinics. I, of course, allude to intra-articular medication with some preparation of iodoform, a treatment that I cannot recommend too strongly to every practitioner in all cases of joint tuberculosis during the early stage. Iodoform has a specific anti-bacillary action, as has been demonstrated so conclusively by experimental research and clinical observation. It loses its anti-bacillary action just as soon as the tubercular lesion becomes the seat of a mixed infection with pus microbes; hence the necessity of resorting to this treatment early before the tubercular product becomes the seat of suppurative infection. It is well known that cases of open tuberculosis, tuberculosis of the skin and open tubercular lesions of joints and wounds, are no longer amenable to successful treatment with this admirable remedy, because when iodoform is exposed to atmospheric air it loses its distinctive, specific anti-bacillary action.

CASE VI. *Tuberculosis of Knee-Joint following a Para-articular Tubercular Abscess,—Intra-articular Iodoformization:—*

I show you a case of tuberculosis of the knee-joint that, I am satisfied, almost every surgeon would have treated by amputation of the thigh. Eleven weeks ago the patient suffered intense pain, showing conclusively that the tubercular affection had already attacked the articular surface of the bones entering into the formation of the knee-joint. When a chronic lesion of a joint gives rise to intense pain, rest assured the disease has extended from the soft structures to the bone surfaces themselves. Here we found an enormous para-articular tubercular abscess; evidently perforation of the capsule of the joint had taken place at the most remote part of the synovial recess, giving rise to an enormous tubercular abscess. The patient was not in a condition to stand amputation, hence we resorted to the use of iodoform injections. We have made six injections; the pain has entirely disappeared, and the swelling has greatly diminished in size. The para-articular tubercular abscess I

show you does not contain, at the present time, more than about half a tablespoonful of what I am about to show you, the characteristic product after treatment with iodoform. There is no longer tubercular pus, but a mucoid material, as you see. The favorite place to puncture the knee-joint in this form of treatment is at a point corresponding to the upper border and outer margin of the patella. Insignificant as it may appear, I must lay down definite rules—I will call them cast-iron rules—in making this little operation that every country practitioner should perform in appropriate cases. In the first place, always avoid puncturing the skin where it has become greatly attenuated, and particularly where it has become discolored by pressure atrophy from beneath; in such cases the formation of a fistula is almost sure to take place, and thus destroy the beneficial results attained with the iodoform treatment. Tunnel healthy tissue some distance from the abscess and from the puncture in the capsule. By making thus a subcutaneous tunnel through healthy tissue, you not only avoid creating a fistulous opening, but, at the same time, you secure a valvular arrangement at the puncture in the joint, on the inner surface, which will prevent the escape of the iodoform emulsion. I show you this method of puncture in connection with this case. Of course, the knee-joint has become partially obliterated. It is now in a condition of repair. We may hope for a useful, although ankylosed limb, because iodoform injections were resorted to too late to secure a movable joint. That we insist on everything brought in contact with the surfaces and particularly with the tissues should be strictly aseptic, you will realize as a matter of course, hence the trocar should always be thoroughly sterilized by boiling, the seat of puncture properly prepared, so that the instrument may not carry with it pus microbes into the tissues and perhaps into the tubercular abscess. I will show you presently a case where such a mixed infection followed a simple puncture of the abdominal cavity in a case of tubercular peritonitis.

I outline in this case a fluctuating area which is quite limited, it is the remnant of a tubercular abscess that contained in the beginning ten to twelve ounces of characteristic tubercular pus. I now render the upper recess of this

fluctuating cavity prominent by making pressure below. You will notice that I am now inserting the trocar at some distance from the cavity. I have now entered the cavity by tunneling the tissues three-quarters of an inch, making thus a subcutaneous tunnel. There escapes what I am exceedingly anxious to show you, a little iodoform and a mucoid material which resembles, very much, healthy synovial fluid. Whenever intra-articular medication of a tubercular joint is followed at the next sitting by the escape of material that has undergone such a change, rest assured that the iodoform is doing its duty. On the other hand, if the joint contents do not undergo such a change; if the broken down tubercular material remains the same in quantity and character after two or three injections, it is a case in which the medication with iodoform does not act favorably. If in such cases, after two or three injections, a radical change is not brought about, it is no longer advisable to continue the treatment. I will pass the specimen around. You will notice that the material looks very much like ordinary synovia. It is not synovia from the joint surface, because the joint surface has been destroyed. It is the changed contents of the tubercular abscess, and this change is brought about by bringing the tubercular tissue in contact with iodoform.

We now wash out the cavity with boracic acid solution. I can distend the cavity, as you see, and wash it out clean and thorough. It now fills up again as you notice, and I bring about the same degree of tension as before the tapping. We are distending the cavity now without effecting a particle of swelling of the knee-joint, showing conclusively that the tubercular abscess is entirely extra-articular. Having thoroughly washed out the cavity, we are now ready to make the iodoform injection. In this case we shall use about two drachms of a ten per cent. iodoform emulsion in glycerine, because the abscess cavity has become so small that it will hardly hold more than one or two teaspoonfuls. We now take the iodoform emulsion in an ordinary sterilized glass syringe, attached to which is a piece of rubber tubing, which we connect with the cannula. After fastening the rubber tubing over the cannula, we distend the cavity. This

distension is harmless. The cavity is about as tense as before the tapping was made. I wish to avoid undue tension. I withdraw the cannula, seal the opening with a compress of iodoform collodion. If we are permitted to use the expression "to cure," we can by this method frequently cure the most hopeless case of joint tuberculosis. Mixed infection has not occurred.

CASE VII. *Technique of Iodoform Injections in Coxitis:*

I wish to show you now the technique of injecting iodoform emulsion into the hip-joint, which has done such remarkable service in this particular case, a single injection having succeeded in diminishing the pain promptly. Krause's method of injection of the hip-joint is known to most practitioners present, which consists of puncturing the joint from behind. Von Bungner has recently published an exceedingly interesting paper describing a new route into the hip-joint, which to me appears preferable to Krause's method. Bungner advises that two landmarks should be located, the femoral artery as it passes over the pubic bone being the first point, and the upper border of the great trochanter the second. Now then, we draw a line from one point to the other, and select the point on this line corresponding to the inner border of the sartorius muscle as the place for the puncture. In order to make a subcutaneous tunnel through the soft tissues, I make a tunnel through the skin up to the point which we have marked, and then by pushing the instrument directly backward we enter the capsule of the joint. Wishing to combine parenchymatous with intra-articular injection, I drive the instrument, by a boring motion, into the softened neck of the femur and am thus enabled to penetrate the bone some distance. I fill the cannula with iodoform emulsion prior to making connection with the rubber tube of the syringe in order not to inject atmospheric air into the cancellous tissue of the bone or the joint. Injection of atmospheric air should be carefully avoided, because we have no assurance that it may not carry with it pathogenic microbes. The cannula rests in the softened neck of the femur, and we shall now by firm pressure saturate some of the cancellated tissue

of the neck of the femur. I now withdraw the cannula, being careful not to bring the point out of the capsule. We shall now make an intra-articular injection, after which the cannula will be withdrawn, and the external puncture sealed with iodoform collodion.

CASE VIII. *Tuberculosis of Knee-Joint, treated with Iodoform Injection, followed by marked pyrexia:—*

I show you an exceedingly interesting case of joint tuberculosis in a 16 year old girl, in connection with which I wish to call your attention to the serious constitutional disturbance that occasionally follows intra-articular injections of iodoform emulsion. In this case, for instance, we found the temperature rose to 104 and 105 degrees soon after the first injection was made, and remained so for a number of days. We are at a loss to account for this rise of temperature for want of any local focus that could be held accountable for the fever; we must, therefore, attribute it to the iodoform injection. I have found similar disturbances in a number of instances, particularly in cases where the entire joint was still free and patent, and where unquestionably intra-articular injection was followed by entrance of the iodoform into the lymph spaces of the synovial membrane, and the para-articular structures, producing a similar effect as is produced by Koch's tuberculin. The injections, however, have probably had a beneficial effect in this case, as the joint lesion is evidently now transformed from a condition of destruction into one of repair, as evidenced by the gradual disappearance of the swelling, pain and tenderness.

CASE IX. *Tuberculosis of the Knee-Joint, treated by Iodoform Injections, and subsequent Amputation:—*

I wish to show you a case of extensive tuberculosis of the knee-joint in which iodoform injections proved a failure. The treatment was not carried out thoroughly. The patient, (a colored man about 45 years old) left the hospital after two injections were made, and when he re-entered an enormous swelling was found in and about the knee-joint, rendering all attempts at conservative treatment apparently useless. We had to perform a high amputation

of the thigh, and found on examining the knee-joint a mass of granulation tissue that filled an ordinary wash basin, the largest amount of granulation tissue I have ever seen in a tubercular knee-joint. We made here our favorite operation, that is, cutaneous flaps, a long and short one, in this case a long flap on the posterior side, because I obtained healthy tissue here; then a circular section through the soft parts. The bone was covered with periosteum, and only skin and subcutaneous tissues utilized as flaps.

Primary union of the wound throughout. I show you a beautiful conical stump such as will prove most useful to the patient when he wears an artificial limb.

Cases of Empyema.

I will now show you some cases of empyema, and in connection with this form of suppurative inflammation, I desire to state that in opening the chest for suppurative pleuritis it is absolutely necessary to make the opening adequately large. You should never open the chest for empyema without resecting at least one rib.

CASE X. I show you first a case of recent empyema involving the larger part of the pleural cavity in a 7 year old girl. The operation was performed about two weeks ago. This case of empyema developed, as is so often the case, after pneumonia. We resected here, as we always do when operating on the right side, the 6th or 7th rib, removing about an inch and a half or two inches, and inserting a double tube one being as large as the one you now see (size of one's thumb), thus making double drainage, which greatly facilitates the flushing of the cavity of the chest with antiseptic solutions by injecting fluid through the smaller tube which escapes through the larger one. In this case suppuration has already ceased; the chest is contracted, and the lung is gradually expanding. The little wound I show you is of some interest. It is the place where the physician made the exploratory puncture and broke off the needle of the exploratory syringe; he then had to make an incision in order to extract the point of the needle, an accident that will occur

unless you make the puncture in the direction of the intercostal space.

CASE XI. *Chronic Empyema, treated by Schede's operation:—*

The next case (man, about 28 years old) is one of chronic empyema in which one rib was resected, but the lung failed to expand. When there is a physical impossibility of the pleural cavity becoming obliterated by granulation, on account of the unyielding character of the chest wall, one of two things must be done; namely, either Estlander's multiple resection of ribs, removing from three to six ribs through a vertical incision, or, as a last resort, when even Estlander's operation fails or when it does not succeed in rendering the chest wall sufficiently yielding, and it seldom does, the only hope then of obliterating the suppurating cavity is to make Schede's operation. I show you here a case in which the left lung is nearly destroyed, where multiple resection of the ribs failed, and we made, what Schede advises, an enormous oval cutaneous flap, which I have described to you on previous occasions, and then resecting the balance of the chest wall, ribs and soft tissues—everything, thus exposing the pleural cavity, then planting the flap upon the diaphragm and the remnant of the lung. This was done in the case before you. In cases of tubercular pleuritis complicated by suppuration, this is the only operation that promises anything for the patient; otherwise suppuration will continue, and it is an impossibility to render the cavity aseptic. Even if it should be made aseptic, it would be an impossibility to obliterate it. Such cases are well adapted for Schede's operation. Do not undertake this operation lightly, for I assure you that the shock attending it is equivalent to the shock produced by amputation at the hip-joint. This is a heroic operation, and should only be resorted to in cases where all other methods have been exhausted.

CASE XII. *Tubercular Empyema:—*The case I now show you comes here through the courtesy of Dr. Edmund

Andrews, it represents another form of pleuritis in which multiple resection of ribs was made, and at the same time quite a large quantity of calcareous material was removed from the pleural cavity, which the patient carries with him as a memento of the operation. It shows the calcerous deposits in the masses of lymph lining the pleura, an occasional occurrence in cases of chronic tubercular pleuritis. I have had no opportunity of examining the patient, but I suspect that the form of pleuritis here was of a tubercular nature, resulting in the formation of calcerous masses which, as most of you know, are so often found in the lung itself. You can see the movement of the diaphragm very nicely. My finger is now on it. I am quite sure that Dr. Andrews will have to extend the operation a little more in order to enable the side of the chest wall to sink in more to meet the diaphragm and the collapsed lung.

CASE XIII. *Suppurative Peritonitis*.—The next case is one of suppurative peritonitis, caused by perforation of a gastric ulcer, giving rise to an inflammatory swelling that gradually increased in size and was variously interpreted by different physicians. Some of them even diagnosticated the case as one of carcinoma of the stomach, because preceding the formation of the swelling the patient had suffered greatly from gastric disturbance. We had every reason to assume the existence of a minute perforation of the stomach in the cardiac end with escape of septic material into the peritoneal cavity, producing a limited suppurative peritonitis, which, after we had made a positive diagnosis, was treated in the following manner: the abscess cavity was opened at a point corresponding to the cartilage of the 8th or 9th rib; I then passed my finger into the abdominal cavity, felt the stomach on one side, the chest wall on the other, and the colon below. I was exceedingly anxious, if possible, to establish a counter-opening, knowing well the difficulty encountered in the healing of such suppurating cavities, particularly in localities surrounded by unyielding structures, as the chest wall was in this case. I explored the abscess cavity and found below here (indicating the left lumbar region) a point where I believed the peritoneal and

pleural cavities were shut out. I could bring the tip of my finger in contact with the abdominal wall; I, therefore, passed in a large pair of curved forceps and made a counter-opening, establishing thorough drainage. Suppuration has now nearly ceased; the drain will be cut in the center and each of the wounds separately drained. I expect in the near future there will be complete healing of the abscess cavity. The patient's temperature has subsided, and she has greatly improved in general appearance.

CASE XIV. *Primary Tubercular Peritonitis*.—Here is a case of primary tubercular peritonitis, as I have every reason to believe from the history. She was brought here with the diagnosis of ovarian cyst. The abdomen two weeks before she appeared at the clinic was much enlarged, was aspirated, and a large quantity of serous fluid removed. Soon after the tapping fever set in, the abdomen became again enlarged, and we found upon opening the abdominal cavity that it was nearly filled with pus. Free drainage was established, and the case has progressed to the formation of a very small fistulous tract. The patient has nearly recovered. The reason I suspect it was a case of tubercular peritonitis is from the character of the fluid removed. It was evidently a case of tubercular peritonitis, or ascites followed by infection with a septic needle or septic trocar. I show you this case to illustrate the importance of resorting to a sterile instrument in tapping for tubercular lesions in order to avoid the possibility of secondary infection with pus microbes.

CASE XV. *Appendicitis*.—I next show you a case of appendicitis which was operated upon two weeks ago. We found an abscess containing about four ounces of foetid pus, and in the operation we made the usual vertical incision. The peritoneal cavity was opened quite extensively. The space I indicate was shut out with tampons of iodoform gauze prior to washing out the abscess cavity. The appendix was found at the bottom of the abscess. I made no attempt to remove it, for the reason that I believed that after tearing the adhesions which shut out the larger portion of the abdominal cavity, the operation might become the means of causing a

diffuse septic peritonitis in the place of a localized form. We drained the abscess. Suppuration has nearly ceased, and if there be found later a fistulous opening leading down to the perforated appendix a secondary operation for removal of the appendix can be done with a greater degree of safety. I show this case to illustrate one form of circumscribed peritonitis in which it is not advisable to persist in the removal of the appendix, but rather reserve that part for a secondary operation. (Patient left the hospital in perfect health two weeks later.)

CASE XVI. *Double Tubercular Coxitis with complete Bony Anchylosis of Both Joints*:—I show you a case that I am anxious that you should study with care while the patient walks about the arena. It is one of those strange cases of double coxitis of a tubercular nature which has resulted in complete anchylosis of both hip-joints. The statement has been made by a prominent writer, that when a patient has anchylosis of both hip-joints he cannot use the limbs. We will see what this patient can do. How this patient walks we are unable to explain, and just what muscles he brings into use in the act of walking will require extended study, but he walks just the same, something I never expected to see. The whole act of walking is carried on at and below the knee-joints, assisted by preternatural mobility of the spine in the lumbar region. He has genu valgus on both sides, which in a measure can be held accountable for the way in which he walks.

CASE XVII. *Tuberculosis of the Nose*.:—I have kept this patient (man about 60) one or two days beyond the legitimate time for the purpose of showing him to the alumni of this college. It was originally a case of very extensive tuberculosis of the left side of the nose requiring the removal of more than one-half of the organ, with the removal of a large portion of the left cheek, making an enormous defect. We attempted to correct this defect by taking a large flap from the forehead, which was brought down over the wound, covering up one half of his nose and a considerable part of his left cheek, while the enormous wound on his forehead was

paved with Thiersch's grafts. A number of the grafts died, but most of them became attached and the greater part of the surface was healed in the course of a week. In the few places where the grafts died there was healing later by granulation. This was a case of tuberculosis, not carcinoma, as was positively demonstrated both from a careful study of the clinical history and from microscopical examination of sections removed. I show you in connection with this another tubercular focus near the angle of the mouth that the patient claims has existed for twenty years. We removed, a few days ago, a similar focus at a point that had been removed previously, and the disease returned. Let me put you on your guard in making a diagnosis of multiple affections of the face so frequently called "surface carcinoma"; they almost, without exception, are tubercular in their origin and in their clinical course. In this case we have a history of progressive ulceration which set in a few years ago from a small tubercular focus involving the left ala of the nose. As soon as the patient became marantic from old age this minute tubercular ulcer assumed an active stage and destroyed within a year or two almost one half of his nose. We have corroborative evidence of the diagnosis by additional similar lesions in a slumbering state, and there is no telling but what they may assume the same activity as the first one which partially destroyed the patient's nose. An important point in connection with these cases is to treat tubercular lesions in the same heroic manner as you would carcinoma, and in the establishment of the diagnosis it is perhaps fortunate that tuberculosis is often mistaken for carcinoma, and consequently treated thoroughly and with good success. We know that statistics of operations for advanced cases of tuberculosis are discouraging, but I am quite sure that these discouraging results are the outcome of imperfect removal of diseased tissue. Carry the incision far beyond the tubercular focus; if you do not, then reinfection takes place. If the excision is followed by closing the defect with healthy tissue the result will in all probability be more favorable than similar operations for carcinoma.

CASE XVIII. *Cranial Tuberculosis*.—I simply show you the next case, with explanatory remarks, to familiarize you with one form of cranial tuberculosis that has produced such disastrous results as to destroy the internal table of the skull over almost its entire area, and a considerable portion of the external table in the region of both ears. The case is, therefore, one of very diffuse cranial tuberculosis. We have made, altogether, four operations, and expect to make one or two more before we shall have the affection under control. In injecting one of the sinuses you see the fluid escapes from the external ear and also from the mouth, knowing that the fistula communicates with the internal ear.

CASE XIX. *Operation for Recurrent Appendicitis*.—We have now before us a case of recurrent appendicitis that has evidently resulted in the formation of a circumscribed intra-abdominal abscess. Some four weeks ago this patient suffered from an acute attack of peritonitis, for which he was treated outside of the (Presbyterian) hospital. He recovered in the course of a week or two, but soon began to have a sense of soreness and severe pain in the ileo-cæcal region. He was admitted to the hospital a few days ago, and we found on examination a prominent swelling in the region of the appendix. There is at present a slight temperature. The indications of the existence of active peritonitis were not clear as the patient was able to walk about.

I find on palpation a swelling which extends from a point half way between the umbilicus and the crest of the ilium—McBurney's point—in a downward direction as far as Poupart's ligament. The swelling is smooth and hard to the touch. I can ascertain the existence of deep-seated fluctuation, and am, therefore, satisfied that the peritonitis has resulted in the formation of a circumscribed abscess, which, of course, we shall expect to find in direct connection with the primary lesion of the appendix vermiformis. We shall now proceed with the operation and determine the course to be pursued after opening the abscess. It is possible that we shall find the peritoneal

cavity at the point of incision excluded, and then I may be able to make an extra-peritoneal operation. If it should invade the free peritoneal cavity we shall pursue the same course as I have pointed out in connection with other cases; that is, we shall shut out the peritoneal cavity temporarily by filling the space with iodoform gauze, then the abscess cavity will be washed out, and later we shall search for the primary cause. If it is deemed expedient, we shall remove the appendix; but if a contra-indication exists we shall establish, as in the other case, free drainage. In many of these cases the patients recover without the removal of the appendix. Often the perforation is minute, and when the abscess has healed the perforation heals. In many instances the appendix is not perforated completely, but infection of the peritoneal cavity has occurred through a small ulcer in the appendix, and ulcerative appendicitis without perforation has given rise to suppurative peritonitis. If a foreign body is in the appendix and if a large perforation is present, I should expect that in the cases treated by simple drainage and disinfection in the abscess cavity the fistulous opening which will form later can be followed, and the appendix removed with much less danger than at the time of the first operation owing to the presence of exceedingly septic pus. In this case I shall have to deviate from my usual plan of making the external incision; that is, in a vertical direction, extending from a point half-way between the spine of the ilium and the umbilicus downward to near Poupart's ligament. That is our favorite incision in operating for recurrent appendicitis. Without any appreciable swelling in such cases the abdominal cavity is at once opened. We take the cæcum as a guide for the appendix, bring it forward into the wound, when the attached portion of the appendix and perhaps the whole appendix, is readily found, isolate it from its surrounding tissues and adhesions and its own mesentery, ligate it near the cæcum, cut off the appendix about one quarter of an inch below the ligature, so that the ligature may not slip, disinfect the mucous membrane with pure carbolic acid, or touch it with a Paquelin cautery, and then bury the stump by suturing the peritoneum over it. This, the ideal operation is out of the question here,

because evidently the inflammatory swelling is very near Poupart's ligament, and I am anxious to drain the abscess, if possible, extra-peritoneally. I shall make, in this case, what is regarded as the typical operation by some surgeons, even in the cases I have just pointed out to you; making the incision parallel to Poupart's ligament.

The swelling is exceedingly hard, but I can feel indistinctly, at least, very deep-seated fluctuation. Whether it is real or apparent remains to be determined by the operation. I shall make an incision parallel to Poupart's ligament and at a point corresponding to the greatest prominence of the swelling. I have now come down to the external oblique, which I find already somewhat oedematous, a condition that points almost unmistakably to the existence of a deep-seated suppuration. I wish to show you this exceedingly interesting pathological condition that we are dependent upon so largely in deep-seated dissections in determining that we are in close proximity to a suppurating depot. The muscular tissue here has lost its normal appearance; it appears macerated, oedematous, and consequently we are in an area of deep-seated edema. We shall now work our way slowly in the direction of the supposed abscess. We are already in the presence of pus; we have opened a circumscribed abscess, and so far have not opened the peritoneal cavity. The pus is extremely foetid. We shall now be content by thoroughly disinfecting the cavity and establishing free drainage. I believe it would be a source of considerable danger to here make an attempt to remove the appendix at this stage. We have been fortunate in reaching the abscess through an extra-peritoneal route. If this does not answer the pathological indications that exist we can later follow the fistulous opening, search for and remove the offending organ, but I believe where the extra-peritoneal operation can be made, as in this instance, and all the pus removed, the abscess cavity freely disinfected and drained, that this operation is preferable to adding to the risks to life a second operation which requires tearing up of the adhesions, consequently so often invading the free peritoneal cavity. This part of the operation can be done with a greater degree of safety when the abscess has healed down to a fistulous

opening, and in all probability nothing more will be required, but in the event that perforation of the appendix exists of some size and it will not close, or a foreign body is present, a second operation can be made with very little additional risk to life. The operation we have done is an ideal one in such cases. We shall now keep the wound open throughout by packing around the drain strips of iodoform gauze. (Patient made a speedy and perfect recovery.)

CASE XX. *Carcinoma of the Lower Lip—Operation:* I shall not be able to make the resection of the ankle-joint for tuberculosis this morning as I intended, for lack of time; but I wish to show you a case of very extensive carcinoma of the lower lip to demonstrate the results of Wolffler's operation. In this case I shall have to do a plastic operation. In the removal of carcinoma of the lower lip of some magnitude, we partially anæsthetize the patient. The case is one of recurrent carcinoma *in loco*. About the right angle of the mouth a typical operation for carcinoma of the lower lip was made about a year ago, when we removed the submaxillary and submental glands. We are now in a quandary as to whether or not the recurrence of the disease is limited practically to the starting-point and now involves only the right angle of the mouth. We shall have to make an entire lower lip after the removal of the carcinoma, which we will do by Wolffler's method. The operation, if done without complete anæsthesia, can be done quite quickly, and in the majority of patients we have no difficulty in securing their co-operation. It is a decided advantage to operate under partial anæsthesia in operations about the mouth, because when blood enters the cavity of the mouth it may find its way into the air passages, thus giving rise to asphyxia from the entrance of blood into the bronchial tubes. We shall partially anæsthetize this patient so that he can cough up blood should it enter the air passages. On the left side there is absolutely no indication of recurrence of the disease; but on the right there is an indurated mass which extends to the lower jaw. Having now secured what is termed "talking anæsthesia", I compress the angle of the mouth with a pair of hæmostatic forceps, and make an incision at a safe distance

from the macroscopical boundary line of the disease. We have now cut through the lip; we have come down to the jaw, and there are indications that the disease has already extended from the lip to the periosteum. I shall, therefore, have to remove the periosteal investment of a corresponding portion of the jaw, and will first cut the mucous membrane at a safe distance from the disease. You see, I have denuded the lower jaw quite extensively. I now remove the masses which appear to be quite circumscribed as yet, but knowing the treacherous nature of recurrent carcinoma about the mouth we shall remove the tissues beyond the diseased area. It is absolutely necessary in operating under existing circumstances to make great speed. I will now have the specimen removed carefully inspected, in order to determine by macroscopical examination whether we have carried our incisions far enough; if not, it would be still time to remedy the defect. It is always a little difficult in examining specimens of carcinoma at the site of a former operation owing to the presence of masses of scar tissue, which so often resemble carcinoma and are liable to be mistaken for it, and vice versa. The nodule we felt prior to its removal is surrounded all around by a zone of tissue that presents every evidence of being in a normal condition. I do not think there is any extension of the disease beyond the zone of operation.

We shall now plan the necessary plastic operation in order to make a lower lip for the patient. I find, that I am unable to make the typical Wolffler operation, owing to the scars existing underneath the chin; they would certainly interfere with the cosmetic result of Wolffler's operation. I, therefore, prefer to separate what remains of the lower lip, mobilize it, and then bring it over nearer to the median line, and make for the patient what you recognize now as a fair looking mouth. In a few moments the plastic operation will be done. I mobilize the flap a little more in order to bring it over with a lesser degree of tension. The mouth will be a great improvement upon the former condition when the patient first presented himself at the clinic. It will not be large, but it will be large enough for all practical purposes. In connection with this plastic operation I desire to call your attention to an important point. I shall bring the lip over

in the manner you observe, which will be the exact line of suturing. If I should make an attempt to suture the wound below, the cosmetic effect would be a failure, because the scar tissue would drag upon the lower lip which should not only be large enough but high enough to at least cover the lower teeth. This will be done by the manner of suturing that I now propose to do. The little corner, which you see, will be left to heal by granulation. We shall anchor the flap at the point which I indicate with a few catgut sutures so that it cannot slip downward. You see, it will more than cover the lower teeth, thus assuring not only a satisfactory functional but also a good cosmetic result

